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Office of
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Selected Speeches and News Releases

July 11 - July 17, 1991

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News Releases

U.S. Department of Agriculture • Office of Public Affairs

USDA ANNOUNCES RULES FOR IMPORTING OSTRICHES AND OTHER NON-FLYING BIRDS

WASHINGTON, July 11—The U.S. Department of Agriculture today announced revised regulations easing restrictions on the importation of flightless birds known as ratites (cassowaries, emus, kiwi, ostriches and rheas) and the hatching eggs of ratites.

"Except for certain ostrich chicks, importation of ratites has been banned since Aug. 15, 1989. The ban was imposed because imported ostriches were found to be infested with ticks capable of introducing and spreading exotic and fatal livestock diseases such as heartwater and East Coast fever," said James W. Glosser, administrator of USDA's Animal and Plant Health Inspection Services.

"The new regulations will allow importation to resume under conditions designed to prevent the introduction of communicable diseases that may be transmitted to livestock and poultry by external parasites and other agents," Glosser said.

The revisions will ensure that ratite hatching eggs and birds for U.S. import, except those imported for zoological purposes, originate from and are maintained in areas that provide certain health requirements and isolation from wild ratites, poultry and other animals.

Permits to import will be granted only when APHIS representatives are granted access to the premises for inspection purposes. Health certification will be based upon flock of origin and not just the birds intended for importation.

Height and weight restrictions have been included for ostriches because the larger birds present a relatively high risk of having external parasites and present inspection difficulties.

The ruling allows importation of hatching eggs under conditions designed to prevent the introduction of communicable poultry diseases. Hatching eggs must be placed in unused containers at the premises of the flock of origin.

The containers must not contain hay, straw, grasses or other materials likely to harbor parasites. The eggs will be quarantined upon arrival,

incubated for the full incubation period, and held for at least 30 days after the last chick in the lot has hatched.

Upon arrival, all ratites will be quarantined by APHIS for at least 30 days. Those quarantined at the New York Animal Import Center may arrive at either the port of New York, N.Y., or at Stewart Airport, Newburgh, N.Y.

Ratites other than ostriches also may arrive at the Port of Honolulu, Hi., and be quarantined at the APHIS quarantine facility there. While in quarantine, APHIS will treat the birds for external parasites and test them for viral diseases of poultry, including Newcastle disease. If they exhibit evidence of other communicable diseases, they will have additional tests.

The regulations for ratites imported as zoological birds do not require that they come from pen-raised flocks. The exception is allowed because the birds are to be kept under veterinary supervision in zoological parks where contact with domestic poultry and livestock is unlikely. Health certification for these birds and eggs will be based on the individual birds rather than on the entire flock of origin.

To further safeguard U.S. livestock and poultry populations, the ruling also prohibits ratites from passing through the United States from one foreign country to another because disease-causing ectoparasites could be introduced during intransit movements.

APHIS considered over 2,000 comments before publishing the final ruling. This final rule will be published in the July 12 Federal Register and becomes effective Aug. 12.

Margaret Webb (301) 436-7799

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MADIGAN NAMES MEMBERS TO SOYBEAN PROMOTION BOARD

WASHINGTON, July 11—Secretary of Agriculture Edward Madigan today announced 63 appointments to the initial United Soybean Board, a national group recently established to implement a national program to improve the soybean industry's position in the marketplace.

The secretary selected the appointees from soybean producers nominated by state soybean boards and, in the case of the two regions, from general farm organizations.

The initial board is composed of 63 members representing 29 states and two regions. Three of the positions will exist for single three-year terms and will represent Kansas, Mississippi and Wisconsin, all of which were recognized on the basis of their relative contributions to the national effort.

The appointees were selected for terms of one, two or three years. During each subsequent year, the secretary of agriculture will appoint onethird of all board members for 3-year terms.

Appointed members, by state or region, are: Alabama—Harold R. Phillips (2-year term); Arkansas—Clarence B. Moery Jr. (3-year term), Joe M. Kirksey (1-year term), Paul G. McCutchen (2-year term); Delaware—Keith H. Carlisle (1-year term); Florida—Thomas D. Stadsklev (2-year term); Georgia—James A. Raines (3-year term), William A. (Tony) Smith (1-year term;

Illinois—Alan L. Puzey (1-year term), Richard L. Borgsmiller (2-year term), Daryl L. Cates (3-year term), Betty A. Wiese (1-year term); Indiana—William P. Silver (3-year term), Robert R. McKee (1-year term), William H. Adler (2-year term); Iowa—Ralph L. Christensen (2-year term), Norman E. Chambers (3-year term), Donald E. Latham (1-year term), Lumir E. Dostal Jr. (2-year term);

Kansas—Wesley R. Sylvester (3-year term), Dale L. Konzem (1-year term), Kent A. Ott (2-year term); Kentucky—Jack Millikan (2-year term), George H. Martin (3-year term); Louisiana—Raymond S. Schexnayder (3-year term), Patrick J. Quinn (1-year term); Maryland—Wilson R. Bounds (2-year term); Michigan—Barry A. Mumby (1-year term), Kam J. Washburn (2-year term);

Minnesota—Sander A. Ludeman (3-year term), Russell D. Roe (1-year term), Joan K. Nagel (2-year term); Mississippi—W. Tom Robertson Jr. (3-year term), Robert W. Mashburn (1-year term), Jerome B. Slocum (2-year term); Missouri—Donald W. Heil (3-year term), Harold F. Clark (1-year term), Robert F. Cook (2-year term);

Nebraska—Howard R. Lefler (3-year term), Carol D. Crook (1-year term), Caroline L. Bargman (2-year term); New Jersey—Phillip D. Prickett Jr. (3-year term); North Carolina—Earl B. Hendrix (3-year term), Margarette S. Laughinghouse (1-year term); North Dakota—Robert B. Sinner (3-year term); Ohio—Robert F. Utz (3-year term), Roy A. Loudenslager (1-year term), Leonard R. Miller (2-year term); Oklahoma—Jack Limon (1-year term);

Pennsylvania—Daryl L. Alger (3-year term); South Carolina—David M. Winkles Jr. (2-year term), Alvin E. DeWitt (3-year term); South Dakota—Dennis S. Hardy (2-year term), George L. Christensen (3-year term); Tennessee—David D. Womack Sr. (1-year term), Robert G. Wilson (2-year term); Texas—Louis W. Pyle (2-year term); Virginia—Robert A Kay Jr. (3-year term), Alvin W. Blaha (1-year term); Wisconsin—John E. Hoffmann (1-year term), Robert J. Oleson (3-year term).

Representing the eastern region (N.Y., Mass., Conn., R.I., Vt., N.H., Maine, W.Va., District of Columbia and Puerto Rico) is Pamela S. Klotzbach (2-year term).

Representing the western region (Mont., Wyo., Colo., N.M., Idaho, Utah, Ariz., Wash., Ore., Nev., Calif., Hawaii, and Alaska) is Stephen C. Pitts (1-year term).

Established under the Soybean Promotion, Research and Consumer Information Act of 1990, the board will be financed by a mandatory assessment of 1/2-of-one-percent of the net market price per bushel at the initial sale of all soybeans marketed in the United States. Assessment refunds will be available.

On July 9, USDA established the Soybean Promotion and Research Order, or set of implementing guidelines, authorized by the Soybean Promotion, Research, and Consumer Information Act. The order defines functions of the United Soybean Board.

USDA's Agricultural Marketing Service monitors operations of the board.

Clarence Steinberg (202) 447-6179

#

USDA REQUESTS COMMENTS ON 1992 FEED GRAIN PROGRAM

WASHINGTON, July 12—Keith Bjerke, executive vice president of the U.S. Department of Agriculture's Commodity Credit Corporation, today asked for public comment on the 1992 feed grain acreage reduction program (ARP).

Bjerke said CCC is seeking public comment on whether the corn ARP should be 5, 7.5, 10, or 12.5 percent and whether the ARP for sorghum and barley should be 0, 5, 7.5 or some other percentage within those

ranges. For oats, the law requires the 1992 ARP to be 0 percent.

Details will appear in the July 15 Federal Register. Comments may be submitted to: Director, Commodity Analysis Division, USDA/ASCS P.O. Box 2415, Washington, D.C. 20013. Comments must be received by Aug. 28 to be assured consideration. All comments will be available for public inspection in Room 3744-S in the South Building of the U.S. Department of Agriculture, 14th and Independence Avenues, S.W., Washington, D.C. during regular business hours.

A regulatory impact analysis on the 1992 feed grain program may be obtained from the Commodity Analysis Division.

The estimated impacts of the selected options for corn are in the following table:

Estimated Impacts of 1992 Corn ARP Options[1]

Item	Option 1	Option 2	Option 3	Option 4	Option 5
ARP (%)	7.5	5	7.5	10	12.5
Participation (%)	80	82	80	77	75
Planted Acreage (millions)	75.5	76.5	75.5	74.5	73.5
Production (million bu.)	8,320	8,440	8,320	8,230	8,145
Domestic Use (million bu.)	6,485	6,515	6,480	6,460	6,430
Exports (million bu.)	1,800	1,815	1,795	1,790	1,775
Ending Stocks 8/31 (mi.bu.)	1,617	1,729	1,664	1,599	1,559
Season Average Producer Price ($/bu.)	2.20	2.15	2.19	2.24	2.28
Deficiency Payments ($/mi.)	3,300	3,715	3,350	2,875	2,525

[1]The estimated impacts for options 1 and 3 differ because lower ARP percentages are considered under option 3 for grain sorghum and barley.

For further information contact Philip W. Sronce, agricultural economist, Commodity Analysis Division, USDA-ASCS, Room 3748-S, P.O. Box 2415, Washington, D.C. 20013; telephone (202) 447-4418.

Robert Feist (202) 447-6789

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USDA ANNOUNCES 1991 WOOL AND MOHAIR SUPPORT PRICES

WASHINGTON, July 12—Support prices for wool and mohair for 1991 marketings will be $1.88 per pound for shorn wool and $4.448 per pound for mohair, a U.S. Department of Agriculture official announced today.

Mohair is being supported at 85 percent of the percentage of parity at which shorn wool is supported, or $4.448 per pound.

Keith Bjerke, executive vice president of USDA's Commodity Credit Corporation, said the wool on unshorn lambs will be supported at a level determined by a formula based on the hundredweight of live, unshorn lambs marketed.

Details will be published in the Federal Register in the near future.

Bruce Merkle (202) 447-8206

#

WEED AND TROPICAL FRUIT MAY YIELD NEW SPECIALTY FRUIT

WASHINGTON—A fruit bred from a tropical plant and a native American weed "looks promising" as a new juice drink, U.S. Department of Agriculture researchers say.

The fruit—a cross of the tropical passion fruit and the maypop weed native to Maryland—has potential as a specialty crop for small farmers or as an alternative crop "where winter freezes have wiped out citrus plantings," said horticulturist Robert J. Knight.

The yet unnamed genetic crosses of the hybrid fruit have yielded a juice that tastes "not exactly tart, but sweet and sour with a rich aroma similar to tropical passion fruit. We are pleased with the crop's fruit quality so far in field tests," said Knight, who is with USDA's Agriculture Research Service. "We could have a new alternative crop in the near future.

"We need to get a consistent yield for growers not only in subtropical areas, but also in states with a warm-temperate climate," he said.

Knight, based at the ARS Subtropical Horticulture Research Laboratory in Miami, Fla., started his own research on the fruit in 1971. He wanted to see if genetic crosses eventually could "combine the maypop's cold

hardiness with the passion fruit's taste and aroma."

His early hybrids proved pollen-sterile. But in 1980 he restored fertility by treating hybrid seedlings with colchicine, a chemical that doubles chromosomes in plants.

High fertility is essential, Knight said, because the amount of juice in a passion fruit depends on the number of healthy seeds it has.

But unlike its maypop (Passiflora incarnata) relative, the passion fruit (Passiflora edulis)" cannot survive cold weather in the temperate zone," Knight said.

Now, he said, the goal is to grow genetic crosses of the hybrid in a cooler climate. He has started working with A. Ann Amis, a scientist at the ARS Southeastern Fruit and Tree Nut Research Laboratory in Byron, Ga.

"This is pretty far north for this type of plant to survive," Amis said. "But our samples of the hybrid look promising."

The new seedlings are from crosses, not clones, "so they're all going to look different," said Amis.

Her initial trials produced some fruit about the size of a baseball with smooth, velvety skin and citrus-like flesh. Its color at maturity ranged from green to yellow, or from maroon to purple-green. It has seeds somewhat like a pomegranate.

Knight said the plant grows as a vine that produces fruit from July until about November or until frost. Vigorous and trailing, the new vine requires a trellis system for optimum production. It seems fairly resistant to disease and insects.

Passion fruit is low in fat and high in vitamin A, potassium and ascorbic acid. The fruit can be eaten fresh, squeezed for juice to be mixed with other juices, or used to make jelly.

Doris Stanley (301) 344-2767
Issued: July 15, 1991

#

USDA PROPOSES SCRAPIE CERTIFICATION PLAN FOR SHEEP AND GOAT FLOCKS

WASHINGTON, July 15—The U.S. Department of Agriculture is proposing to adopt a voluntary scrapie certification program for sheep and goat flocks as part of a new approach for controlling the disease. USDA also is proposing to require highly visible identification marks on sheep and goats if they are moved interstate from flocks that pose a risk of spreading scrapie.

"The existing approach toward scrapie control hasn't included industry input and as a result hasn't been effective," said James W. Glosser, administrator of USDA's Animal and Plant Health Inspection Service. "The sheep and goat industry and other interested groups expressed concern about the current scrapie control program and, because of the many comments we received, a negotiated rulemaking committee was formed to bring all of these diverse groups together.

Glosser said the Scrapie Negotiated Rulemaking Advisory Committee met eight times between May 1990 and January 1991, and reached consensus on the content and requirements of a future scrapie program. Today's proposal reflects this consensus, he said.

Scrapie is a degenerative disease of the central nervous system of sheep and goats with an extremely long incubation period—up to 42 months or longer. Infected animals may show signs of nervousness, lack of coordination, significant weight loss, and persistent itching. All infected animals eventually die from the disease.

Under the proposal, the industry would, over time, develop flocks certified free of scrapie. Participation would be voluntary. Participating flocks would furnish a source of uninfected animals and would establish a basis for eventually eradicating the disease.

Participating flocks would progressively move through three intermediate classes (Class C, Class B and Class A) until they reach the scrapie-free Certified class. The process would be guided by a set of Uniform Methods and Rules, which were also established by the Scrapie Negotiated Rulemaking Advisory Committee. The rules would require owners to keep comprehensive health records and to remove from their flocks any animals determined to be a high risk for scrapie, Glosser said.

Owners of participating flocks would have to restrict purchase of new animals to those in the same or higher class of the flock certification program and submit the flock to periodic inspections. If animals died

after showing signs of scrapie, owners would have to submit samples for testing and dispose of the carcasses in prescribed ways.

Under the proposed rule, the industry also would adopt a system for identifying sheep and goats at risk for having scrapie. A National Scrapie Oversight Committee established under the Uniform Methods and Rules would be asked to recommend an effective, inexpensive identifying mark. Under specified conditions, animals from both participating and nonparticipating flocks would have to be marked before they could be shipped across state lines. However, there generally would be fewer circumstances in which animals from participating flocks would have to be marked, Glosser said.

Notice of the proposal will be published in the July 16 Federal Register. Comments will be accepted if they are received on or before Sept. 16. An original and three copies of written comments referring to Docket 91-019 should be sent to Chief, Regulatory Analysis and Development; PPD, APHIS, USDA; Room 866 Federal Building; 6505 Belcrest Road; Hyattsville, Md. 20782. Comments may be inspected as soon as received at USDA, Room 1141 South Building, 14th Street and Independence Avenue, SW., Washington, D.C., between 8:00 a.m. and 4:30 p.m., Monday through Friday, except holidays.

Natalie Bosecker (301) 436-7253

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USDA REVISES P.L. 480 TITLE I COUNTRY ALLOCATIONS FOR FISCAL YEAR 1991

WASHINGTON, July 16—The U.S. Department of Agriculture today issued revised country and commodity allocations for the fourth quarter of fiscal year 1991 under Title I of Public Law 480, the Food for Peace Program.

F. Paul Dickerson, general sales manager for USDA's Foreign Agricultural Service, said that of the $460.1 million available for Title I and Food for Progress commodity purchases, $28.7 million remains unallocated. Dickerson said the Philippines, Morocco, Congo, Sri Lanka and the Cote d'Ivoire signed agreements in the third quarter. The prior allocation of $20 million for Pakistan was returned to the unallocated reserve. Egypt was allocated an additional $10 million for wheat/flour, and Jamaica $10 million for wheat, rice and feed grains. Because

situations develop which can cause a change in country and commodity allocations during the fiscal year, these allocations do not represent final U.S. commitments with participating governments.

Developing countries that are eligible for the Title I program have problems meeting all of their food needs through commercial channels and are experiencing a shortage of foreign exchange earnings. The factors that determine priorities for country allocations include food needs, potential for becoming a U.S. market, and improvement of food security through agricultural projects and economic measures.

Title I of P.L. 480 is a concessional sales program to promote exports of agricultural commodities from the United States and to foster broad-based sustainable development in recipient countries. The program provides export financing over payment periods of from 10 to 30 years, grace periods on payments of principal of up to 7 years, and low interest rates. Depending upon the terms of the agreement, payment may be in dollars or in local currencies.

USDA will continue to provide information on the status of Title I allocations each quarter. Fiscal year 1992 allocations will be announced about Oct. 1.

Additional technical information on the P.L. 480 program is available from Mary Chambliss of USDA's Foreign Agricultural Service, (202) 447-3573.

A complete list of allocations follows.

FY 1991 Public Law 480 Title I
Country and Commodity Allocations

Country	$Mil. Total	Undesig-nated $	Wheat/ Flour a/	Rice	Grains	Veg-oil	Oil-seeds/ Meals	Beans	Tal-low
	(Mil)	*(Mil)*	*(- - - - - - - 1,000 Metric Tons - - - - - - -)*						
Congo	2.0	—	7	—	—	—	—	—	
Costa Rica	15.0	—	101	—	—	—	—	—	—
Cote d'Ivoire	5.0	—	—	15	—	—	—	—	—
Egypt	160.0	—	1,176	—	—	—	—	—	—
El Salvador	35.0	—	133	—	—	19	—	—	25
Guatemala	18.0	—	136	6	—	—	—	—	—
Guyana	7.0	—	57	—	—	—	—	—	—
Jamaica	40.0	—	101	31	70	—	—	—	—

Morocco	35.0	—	166	—	—	32	—	—	—
Philippines	15.0	—	—	—	—	—	15	—	—
Sierra Leone	5.0	—	17	12	—	—	—	—	—
Sri Lanka	12.3	—	93	—	—	—	—	—	—
Tunisia	15.0	—	62	—	65	—	—	—	—
Zaire	16.0 b/	—	74	—	—	—	—	—	—
Subtotal	380.3	0	2,116	71	135	51	15	0	25
Budget transfers for Food for Progress									
Nicaragua	36.1 c/	3.0	54	5	—	14	15	6	16
Panama	15.0 d/	—	—	—	—	28	—	—	—
Subtotal	51.1	3.0	54	5	0	42	15	6	16
Unallocated Reserve	28.7								
TOTAL COMMODITY	460.1	3.0	2,170	76	135	93	30	6	41

a/ Wheat Flour included as grain equivalent.
b/ Includes value of commodities carried in from FY 1990agreement.
c/ Includes $6.4 million for ocean freight financing.
d/ Includes $1.6 million for ocean freight financing.

Sally Klusaritz (202) 447-3448

#

INSECTS TRIP UP CRIMINALS

WASHINGTON—An insect turns out to be the vital clue to a crime.

In the movie "The Silence of the Lambs," a laboratory analysis of the insect—a moth left in the victims' mouths—leads to the identity of the murderer.

"That particular analysis is fiction, but it's based on fact," said the U.S. Department of Agriculture's Douglass R. Miller, an expert on identifying insects.

Miller's Systematic Entomology Laboratory is the real-life counterpart of the one in the film. He oversees 26 scientists in USDA's Agricultural Research Service who usually delve into insect mysteries involving farm crops and animals, stored grains and the like.

"Our daily job is to learn all we can about those 16 orders of insects—out of 31—that are beneficial or detrimental to agriculture," Miller said.

That same expertise—where identifying a specific species is often like finding the needle in the proverbial haystack—is needed in criminal cases, he said.

Law agencies contact the lab, he said, about once every two months for detective work on baffling insects. Not all the research has been on murder cases, as it was in the "Lambs" movie. Law officials have asked the scientists to work on crimes from drug smuggling to dating the death of a corpse.

Lab scientists share facilities at the ARS agriculture center in Beltsville, Md., and the Smithsonian Institution's Museum of Natural History in Washington.

At the museum, scientists rely on one of the world's largest insect collections—over 30 million specimens. That explains why the Federal Bureau of Investigation and other law enforcement offices ask for help in criminal cases, said Miller.

On criminal cases, he said, an insect's origin can trip up a murderer. An example: A 1985 FBI murder case in Florida.

A couple was killed near the Everglades. After a nationwide search, a suspect was arrested in Colorado. When questioned, he claimed never to have been in southwestern Florida. Police found insects in the suspect's car radiator and a mummified frog inside the car.

Lab scientists determined the insects were "love-bugs," or flies that swarmed by the millions in Florida around the time of the killing. As for the frog, it turned out to be a Cuban tree frog that can only live in a subtropical environment and was indigenous to that state.

Outcome: The evidence contradicted the alleged murderer's statement. He was found guilty and sentenced to prison in Florida.

In a 1981 drug case, a scientist was asked to identify an insect found on a plane from South America carrying marijuana. His testimony helped pinpoint the origin of the flight. As a result, the charges were changed from possession to drug smuggling. The plane's two pilots were given prison sentences.

Miller said in other cases lab scientists are often asked to determine how long a corpse has been dead. Various insect species specialize on carrion in various states of decay.

By identifying the kinds of insects found in a corpse, scientists can make fairly accurate assessments of the length of time that a corpse has been deteriorating, Miller said. That happened in March 1991 when a beetle from a female corpse found in Virginia proved the victim had been dead four to eight months before her body was discovered.

Apart from the criminal cases, the bulk of the 2,500 "urgent" identifications a year are made for insects sent from U.S. ports, according to Miller.

"Almost 50 percent of the specimens we identify come from inspectors in USDA's Animal and Plant Health Inspection Service stationed at ports of entry," said Mary Lacey Theisen, head of the lab's taxonomic services unit. "We want to keep unwanted insects—potential pests—out of the country."

On other requests for identifying insects, Theisen said, the lab requires justification, usually from scientists in this country and abroad.

"It takes meticulous research to identify an insect, not only its physical characteristics—like wing type, size and color—but also its origin, habitat, behavior and predators," she said.

"Obviously, the Smithsonian's insect collection is our primary resource," Miller said. "It's like a library we're always updating."

He said the Smithsonian and USDA have "a track record of 108 years of superb cooperation in studying and identifying insects worldwide."

As for "The Silence of the Lambs," here's how the lab helped solve the case. FBI agent Clarice Starling asked the scientists to identify the moth left in each victim's mouth and get a possible lead on where the psychotic killer might have gotten the insects.

From the first victim, they identified a noctuid, or night moth. It was Erebus odora, the Black Witch Moth. Starling hoped identifying this moth would help her figure out where the psychopath came from.

But the crucial clue to finding the killer was Acherontia styx, a Death's-head Moth, taken from a later victim. Found in Malaysia, it can only survive in the United States if raised indoors. This moth helped Starling find the murderer.

Dvora Aksler Konstant (301) 344-3108
Issued: July 16, 1991

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EATING COMPLEX CARBOHYDRATES MAY NEGATE COPPER DEFICIENCY PROBLEMS

WASHINGTON, July 17—Eating starchy foods—potatoes, breads, pastas and vegetables—instead of high-sugar foods may prevent ill effects from low intakes of copper, according to U.S. Department of Agriculture animal studies.

In study after study, young male rats developed severe anemia, enlarged hearts and died prematurely from a copper-deficient diet when the main source of carbohydrate was sugar. When it was starch, or when the animals got adequate copper, "nothing happened," said Meira Fields. "They were protected." Fields is a biochemist under contract with USDA's Agriculture Research Service.

The animals' diets were far more deficient in copper than people's diets and far higher in sugar. However, there is concern about the adequacy of copper intake by the U.S. population, said Walter Mertz, director of the Beltsville, Md., Human Nutrition Research Center where the studies were done.

The richest sources of copper are oysters, liver, cocoa, blackstrap molasses and black pepper. Lobster, nuts and seeds and whole wheat are also good sources of copper.

Further, said Fields, there's evidence that tissue levels of both selenium and calcium are altered in animals by a high-sugar diet but not by a high-starch diet.

Most scientists studying mineral deficiencies feed their animals the American Institute of Nutrition diet, in which half the calories come from sucrose—table sugar, said Fields. "You may not find the same effects when you work with complex carbohydrates."

Table sugar is half fructose and half glucose, whereas starch is all glucose. In eight years of studies at the Beltsville center, Fields and colleagues have found the culprit to be fructose, which the body metabolizes differently than glucose.

Fructose and substances that are metabolized similarly, such as alcohol, create a unique environment in which copper deficiency can cause damage, said Fields. Starch, on the other hand, "isn't involved in the damaging metabolic pathway."

Fields and colleagues Charles G. Lewis and Mark D. Lure recently found that damage to the heart and other organs hinges on a change in the way the copper-deficient animals handle another mineral—iron.

All copper-deficient rats, regardless of the carbohydrate in their feed, store more iron in their livers than animals that get adequate copper, said Fields. Only the copper-deficient rats eating a high-fructose diet develop severe anemia—indicating they lack iron to make hemoglobin for red blood cells.

"When we injected these rats with extra red blood cells, the anemia and all other symptoms disappeared," she said, explaining that the animals apparently couldn't use the iron they had. "If we both have $20 in our pocket, but mine is in quarters and yours is a $20 bill, your $20 is useless for a meter when we go to park our cars."

But the rats' inability to use their iron when fed fructose did not explain all the complications of copper deficiency. So Fields speculated that the iron might be toxic. People who suffer from diseases of iron overload exhibit symptoms very similar to those of the copper-deficient rats getting fructose, she said.

Fields sent livers from both the starch and fructose-fed rats to researchers at the Medical College of Wisconsin to assay for free radicals, which damage body tissues by oxidizing molecules that make up cells. Livers from fructose-fed rats "generated five to eight times more free radicals of iron," she said.

In a later study, Fields and co-workers gave half of the fructose-fed rats a drug that binds to iron and removes it from the body through the urine. "If iron overload is responsible for the severity of damage, then it should be remedied by reducing iron stores," she reasoned.

Rats that were treated with the iron-binding drug suffered almost none of the symptoms and damage of the untreated rats, she said. And none of them died prematurely.

"In the long-run," Fields said, "it's the type of dietary carbohydrate that protects rats from copper deficiency."

Judy McBride (301) 344-4095

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USDA AWARDS GRANTS FOR SCHOOL BREAKFAST PROGRAMS IN 30 STATES

WASHINGTON, July 17—The U.S. Department of Agriculture has awarded $5 million in federal grants to school districts in 30 states to help start school breakfast programs in the next school year, Secretary of Agriculture Edward Madigan announced today.

"We've added more than 5,000 schools and a half-million children to the breakfast program nationwide since 1989, the year before the grants began," said Madigan. "Because of this program, many young people are receiving the nourishment they need to begin the school day."

He said the program is now available in more than 45,000 schools, and that more than 4 million children participate every day.

The grants are part of a five-year program to provide start-up funds for new school breakfast programs. USDA's Food and Nutrition Service, which administers the School Breakfast Program, provided $3 million for 1990, and will make $5 million available for new programs each year through 1994.

Madigan said the grants have already led to a 15-percent increase in the number of children eating school breakfast, and will contribute to better nutrition and better learning for the children at those schools.

The grants were awarded on the basis of need, number of children who could be added to the program, and feasibility and cost-effectiveness of the school districts' proposals.

Madigan said the federal grants will supplement money being provided by the states to start the new breakfast programs. He said most of the grant money would be spent by the school districts for capital expenditures, but that some would also go for training of food service workers and to publicize the new programs.

Chart on next page

The amounts awarded to the 30 states are:

Alabama	$171,087	New Jersey	$948,478
Arizona	146,980	New York	340,262
Arkansas	430,375	North Carolina	139,756
Connecticut	240,100	North Dakota	59,964
Indiana	86,619	Oregon	35,131
Kansas	233,548	Pennsylvania	283,945
Kentucky	253,821	South Carolina	108,523
Louisiana	12,200	South Dakota	15,582
Maine	20,640	Texas	47,852
Michigan	141,756	Utah	118,490
Minnesota	166,339	Vermont	49,438
Mississippi	28,850	Virginia	90,185
Missouri	128,454	Washington	45,357
Nebraska	129,913	Wisconsin	76,110
Nevada	26,149	Wyoming	421,099

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